Preface

This volume contains selected and revised versions of papers that were presented at the 15th Workshop on Computational Models of Natural Argument (CMNA XV), at the 5th International Workshop on Empathic Computing (IWEC-14), and at the 6th International Workshop on Empathic Computing (IWEC-15).

While IWEC-14 was co-located with the 13th Pacific Rim International Conference on Artificial Intelligence (Gold Coast, Australia, December 1–5, 2014), the other two workshops were held with the 14th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2015) on October 26, 2015, in Bertinoro (Forlí-Cesena), Italy. PRIMA is one of the oldest active agent computing forums, beginning in 1998 as a regional agent workshop (the Pacific Rim International Workshop on Multi-Agents). Alongside the main conference, PRIMA includes workshops that are intended to facilitate active exchange, interaction, and comparison of approaches, methods, and various ideas in specific areas related to intelligent agent systems and multi-agent systems. PRIMA started as an Asia-Pacific workshop in 1998 and has been running as a full conference since 2009 to become one of the leading and influential scientific conferences for research on multi-agent systems. Each year, PRIMA brings together researchers, developers, and practitioners from academia and industry to showcase research in several domains, ranging from foundations of agent theory and engineering aspects of agent systems, to emerging interdisciplinary areas of agent-based research. Previous successful editions were held in Nagoya, Japan (2009), Kolkata, India (2010), Wollongong, Australia (2011), Kuching, Malaysia (2012), Dunedin, New Zealand (2013), Gold Coast, Australia (2014), and Bertinoro, Italy (2015).

The CMNA workshop series attracts high-quality submissions from researchers around the world since its inception in 2001. CMNA acts to nurture and provide succor to the ever-growing community working on argument and computation, a field developed in recent years overlapping argumentation theory and artificial intelligence. AI has witnessed a prodigious growth in uses of argumentation throughout many of its subdisciplines: agent system negotiation protocols that demonstrate higher levels of sophistication and robustness; argumentation-based models of evidential relations and legal processes that are more expressive; groupwork tools that use argument to structure interaction and debate; computer-based learning tools that exploit monological and dialogical argument structures in designing pedagogic environments; decision support systems that build upon argumentation theoretic models of deliberation to better integrate with human reasoning; and models of knowledge engineering structured around core concepts of argument to simplify knowledge elicitation and representation problems. Furthermore, benefits have not been unilateral for AI, as demonstrated by the increasing presence of AI scholars in classic argumentation theory events and journals, and AI implementations of argument finding application in both research and pedagogic practice within philosophy and argumentation theory. The longest standing event on argument and computation, the CMNA series forms a

complement to more recent series, like ArgMAS, which began in 2004, COMMA, which held its first meeting in 2006, and the more recent ArgMining, which started in 2014.

The IWEC workshop series started in 2010 (in conjunction with the HumanCom 2010 conference, in the Philippines), and was subsequently held in 2011 in Vietnam, in 2012 in Malaysia along with PRICAI, in 2013 in China along with IJCAI, in 2014 in Australia along with PRICAI, and in 2015 in Italy along with the PRIMA conference. It is a well-known venue for researchers interested in technologies that bring emotional and social intelligence into computing systems. Empathic computing systems are software or physical context-aware computing systems capable of building user models and provide richer, naturalistic, system-initiated empathic responses with the objective of providing intelligent assistance and support. Empathy is viewed as a cognitive act that involves the perception of the user's thought, affect (i.e., emotional feeling or mood), intention or goal, activity, and/or situation and a response due to this perception that is supportive of the user. An empathic computing system is ambient intelligent, i.e., it consists of seamlessly integrated ubiquitous networked sensors, microprocessors, and software for it to perceive the various user behavioral patterns from multimodal inputs. Empathic computing systems may be applied to various areas such as e-health, geriatric domestic support, empathic home/space, productivity systems, entertainment, and e-learning. Lastly, this approach draws upon the expertise in, and theories of, ubiquitous sensor-rich computing, embedded systems, affective computing, user-adaptive interfaces, image processing, digital signal processing, and machine learning in artificial intelligence.

Papers submitted to these workshops were reviewed by at least three reviewers, and the accepted papers were included in the informal workshop proceedings and presented at the workshops. Selected papers were then invited to be revised and submitted for consideration for inclusion in this volume after further review by the workshop program chairs. CMNA XV had 12 submissions. Four were selected for inclusion in this volume. IWEC-14 had 11 submissions, and four were selected for this volume. IWEC-15 had eight submisisons, of which five were selected for this volume.

We thank the members of the workshop Program Committees who produced timely reviews under tight time constraints, and hope you enjoy the proceedings!

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